



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,499	01/04/2001	Joseph A. Bailey	5500-66800	7413

7590 10/23/2003

B. Noel Kivlin
Conley, Rose & Tayon, P.C.
P.O. Box 398
Austin, TX 78767-0398

EXAMINER

CLEARY, THOMAS J

ART UNIT	PAPER NUMBER
----------	--------------

2181

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/755,499

Applicant(s)

BAILEY, JOSEPH A.

Examiner

Thomas J. Cleary

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The Examiner notes that the undersigned representative on the response filed 22 Sep. 2003 is not currently of record. Applicant is advised to insure that appropriate power of attorney be made of record in the application if required. See MPEP § 402 and 37 CFR § 1.34.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "40" has been used to designate both "system memory" in Amendment 1 to be inserted into the specification beginning at Page 7 Line 3 and "main memory" in Figure 1. It is clear to the Examiner that the applicant intended to correct said error by changing Number 40 in Figure 1 from "main memory" to "system memory". However, said correction has not been indicated on the replacement drawing sheet filed 22 Sep. 2003. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. Claims 1, 2, 3, 7, 8, 17, 18, 19, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk in view of Lu and Huang et al. ("Huang").

In reference to Claims 1 and 17, Ruszczyk teaches a sorter (analogous to the router of Claim 1) that will receive the upstream packets and route them to one of a plurality of upstream queues (analogous to the buffers of Claim 1) based on the priority of the packet (See Figure 4, Column 3 Lines 16-19 and 50-58 of Ruszczyk). In reference to Claims 2 and 18, Ruszczyk teaches a plurality of schedulers (analogous to the reorder logic circuits of Claim 2), whose operation is based on a set of predetermined criteria, connected to the queues that determine the order of transmission based on the priority of the packets (See Figure 4, Column 3 Lines 58-67, and Column 4 Lines 1-4 of Ruszczyk). In reference to Claims 3 and 19, Ruszczyk teaches a downstream queue (analogous to the buffers of Claims 3 and 19) for receiving packets with a priority and a scheduler (analogous to the reorder logic circuit of Claim 3), whose operation is based on a set of predetermined criteria, connected to the queue that determines the order of transmission based on the priority of the packets (See Figure 4, Column 3 Lines 11-15 and 50-67, and Column 4 Lines 1-4 of Ruszczyk). In reference to Claims 7, 8, 23, and 24, Ruszczyk teaches that packets with the same priority are routed to the same queue (analogous to the buffers of Claims 7, 8, 23, and 24) and packets with different priorities are routed to different queues (See Figure 4 and Column 3 Lines 55-58 of Ruszczyk). Ruszczyk does not teach that the packets are

Art Unit: 2181

routed to a given one of the upstream buffers based on the associated identifier that is indicative of the source of the packet. Lu teaches a system in which priorities are assigned to communication signals based on the source of the signal, and therefore the priority is indicative of the source (See Column 20 Lines 28-40 of Lu). One of ordinary skill in the art at the time the invention was made would combine the device of Ruszczyk with the device of Lu, resulting in the inventions of Claims 1, 2, 3, 7, 8, 17, 18, 19, 23, and 24, in order to allow each source fair and efficient access to the router by assigning separate priorities, based on the bandwidth requirement of the source, to each source connected to the router (See Column 20 Lines 38-41 of Lu and Column 2 Lines 27-31 of Huang). Because each source is assigned a different priority value, the priority value is indicative of the source of the packet, and the combined device of Ruszczyk and Lu, which sorts packets based on priority, will necessarily sort them by source as well.

5. Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk and Lu as applied to Claims 1, 2, 3, 17, 18, and 19 above, and further in view of Cidon et al. ("Cidon").

Ruszczyk and Lu teach all the limitations of Claims 4 and 20 except for the predetermined criteria including the arrival times and transaction types of each of the plurality of upstream and downstream packets (See Figure 4, Column 3 Lines 11-19 and 50-67, and Column 4 Lines 1-4 of Ruszczyk and Column 20 Lines 38-41 of Lu). Cidon teaches a network interface that determines packet parameters including arrival

time and packet type (See Column 14 Lines 55-60 of Cidon). One of ordinary skill in the art at the time the invention was made would combine the apparatus of Ruszczyk and Lu with the parameters of Cidon, resulting in the invention of Claims 4 and 20, in order to provide further information for use by the weighted round robin scheduler for assigning a transmission deadline and choosing the order that the data will be transmitted (See Column 5 Lines 35-60 of Ruszczyk).

6. Claims 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk, Lu, and Cidon as applied to Claims 1-4, 7-8, and 20 above, and further in view of Drott et al. ("Drott").

Ruszczyk, Lu, and Cidon teach all the limitations of Claims 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 21, and 22 except for the local node bridge circuit configured to translate a peripheral bus transaction into an upstream packet and forward it upstream, a dedicated node stream buffer coupled to said local node bridge circuit and configured to store said upstream packet, a processor, a bus bridge coupled to said processor, and a packet bus coupled to a packet bus device and said bus bridge (See Figure 4, Column 3 Lines 11-19 and 50-67, and Column 4 Lines 1-4 of Ruszczyk; Column 20 Lines 38-41 of Lu; and Column 14 Lines 55-60 of Cidon). Drott teaches a bridge which will convert a signal from a peripheral device into a packet before sending it to a queue (analogous to the buffer of Claims 6 and 14) and transmitting it to a destination (See Figures 1, 2, and 3, Column 4 Lines 41-61, and Column 5 Lines 29-54 of Drott). Drott further teaches a processor coupled to a bus bridge coupled to a NG I/O link (analogous to the packet

Art Unit: 2181

bus of Claims 9-16) (See Column 4 Lines 5-22 of Drottar). One of ordinary skill in the art at the time the invention was made would combine the apparatus of Ruszczyk, Lu, and Cidon with the bridge circuit, queue, processor, bus bridge, and NG I/O bus of Drottar, resulting in the inventions of Claims 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 21, and 22, in order to allow a wide variety of peripheral devices which do not use packet communications to be connected to the packet bus (See Column 4 Lines 44-57 of Drottar) and to allow the peripheral devices to be located remotely from the processing unit (See Column 4 Lines 4-5 of Drottar).

Response to Arguments

7. Applicant's arguments with respect to Claims 1-24 have been considered but are moot in view of the new ground(s) of rejection. Applicant has modified the scope of the claims to include the associated identifier being "indicative of a source of each of said plurality of upstream packets". As shown above, such changes are not persuasive to overcome a rejection based on 35 U.S.C. 103(a). The new ground(s) of rejection presented in this Office action in reference to the aforementioned claims have been necessitated by the Applicant's amendment.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

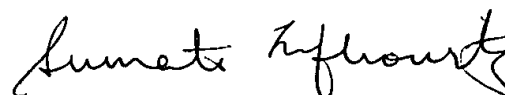
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Cleary whose telephone number is 703-305-5824. The examiner can normally be reached on Monday-Thursday (8-5:30), Alt. Fridays (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 2181

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5631.

tjc

A handwritten signature in black ink, appearing to read "Sumati Lefkowitz", with a stylized flourish at the end.

SUMATI LEFKOWITZ
PRIMARY EXAMINER